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ART. XXII.—"Sooty Mould" of the Tree-Fern *Dicksonia*.

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The fronds of a *Dicksonia* plant, growing in a fernery at Doncaster (approximately 11 miles east-north-east of Melbourne), were found covered by a dense black film, which so far as could be revealed by microscopic examination, was due entirely to the fungus *Teichospora salicina* (Mont.) Gau.

The perithecia, present in abundance, are dark, glabrous, roughly spherical bodies, of approximately 112μ in diameter. They contain ascospores which are brown in colour, muriformly septated with usually three transverse septa, and characteristically constricted in the median region. These fruit-bodies are in every way similar to those previously described in connexion with "sooty mould" of *Bursaria spinosa* (3), although the spores are slightly larger, measuring on an average $19.5\mu \times 9.5\mu$.

On the fronds examined by me, the imperfect stage of this fungus was not found occurring so commonly as the perithecial, but some dark, elongated, linear pycnidia, approximately 224μ long and averaging 32μ in width, were seen.

The pycnospores, which are very like the ascospores, differ, however, in certain points of detail; they are not waisted in shape, and also the longitudinal septa are frequently missing. The average dimensions of these spores may be given as $16.5\mu \times 8.2\mu$. Surrounding the pycnidium-mouth a fringe was visible in some cases, but otherwise this pycnidial form is identical with that already described and illustrated for *Teichospora salicina* constituent in "sooty mould" of *Bursaria spinosa* (3, fig. 4).

In 1892 Gaillard found *Meliola tortuosa* Wint., f. infecting plants of *Dicksonia* L'Her. in Brazil (4) and (6). Apparently the only other record of a "sooty fungus" occurring on any of the tree-fern genera was made in 1890 (2) when *Asterina* (*Asterella*) *Alsophilae* Cke. and Mass. was found growing on fronds of *Alsophila rebeccaæ* F. Muell., collected by Mueller in north-eastern Queensland, Australia.

Both of the above mentioned fungi are ectoparasitic forms, penetrating the tissues of their host by means of haustoria, and it seems that no prior record has been made of a true "sooty mould," which as clearly defined by Neger (5), is characteristically epiphytic in nature.

Within the limits of the writer's experience "sooty mould" has never been found attacking tree-ferns growing in their natural habitat, and its development on this particular specimen is possibly due to the rather confined atmospheric conditions of the fern-house, which, however, it should be noted, was not artificially heated in any way. *Teichospora salicina*, which is responsible for the sootied condition in this instance, is a normal constituent of "sooty moulds" in temperate climates. On the other hand, the observations of Neger (5) and van Beyma Thoe Kingma (1) show that the "sooty mould" of European hot-house plants is almost invariably due to the fungus *Caldariomyces fumago* Wor. (*Fumago vagans* Pers.), a form which is adapted to high temperature conditions.

References.

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- (2) COOKE, M. C. *Grev.* xviii., p. 81, 1890.
- (3) FISHER, E. E. *Proc. Roy. Soc. Vic.* (n.s.), xlv (2), 1933, pp. 171-202.
- (4) GAILLARD, A. *Le Genre Meliola*. Thèse (Paris), 1892, p. 67, tab. 21, fig. 2.
- (5) NEGER, F. W. *Flora. N. F. Bd.*, x, pp. 67-139, 1918.
- (6) SACCARDO, P. A. *Syll. Fung.* xi., p. 263.